

ABSTRACT

A solid polymer electrolyte fuel cell (2) is formed from an electrode structure (7) and first and second separators (8, 9). The electrode structure (7) has a solid polymer electrolyte membrane (10), first and second electrode layers (11, 12), and first and second diffusion layers (13, 14). The first separator (8) forms a first gas passage (P_H) through which a fuel gas (H) flows, and the second separator (9) forms a second gas passage (P_A) through which an oxidizing gas (A) flows. A first jutting-out portion (15) of the solid polymer electrolyte membrane (10) and a second jutting-out portion (16) of the second diffusion layer (14) are joined together over the entire peripheries thereof via a cured adhesive layer (17), and the second jutting-out portion (16) is in a state in which it is impregnated by cured adhesive. A seal (27) of the first separator (8) is in intimate contact with the surface of the first jutting-out portion (15), and a seal (21) of the second separator (9) is in intimate contact with the surface of the second jutting-out portion (16). It is therefore possible to eliminate the problem of leaked fuel gas and oxidizing gas reacting with each other around the electrode structure.